

## A NEW SPECIES OF ASTERELLA FROM MEXICO

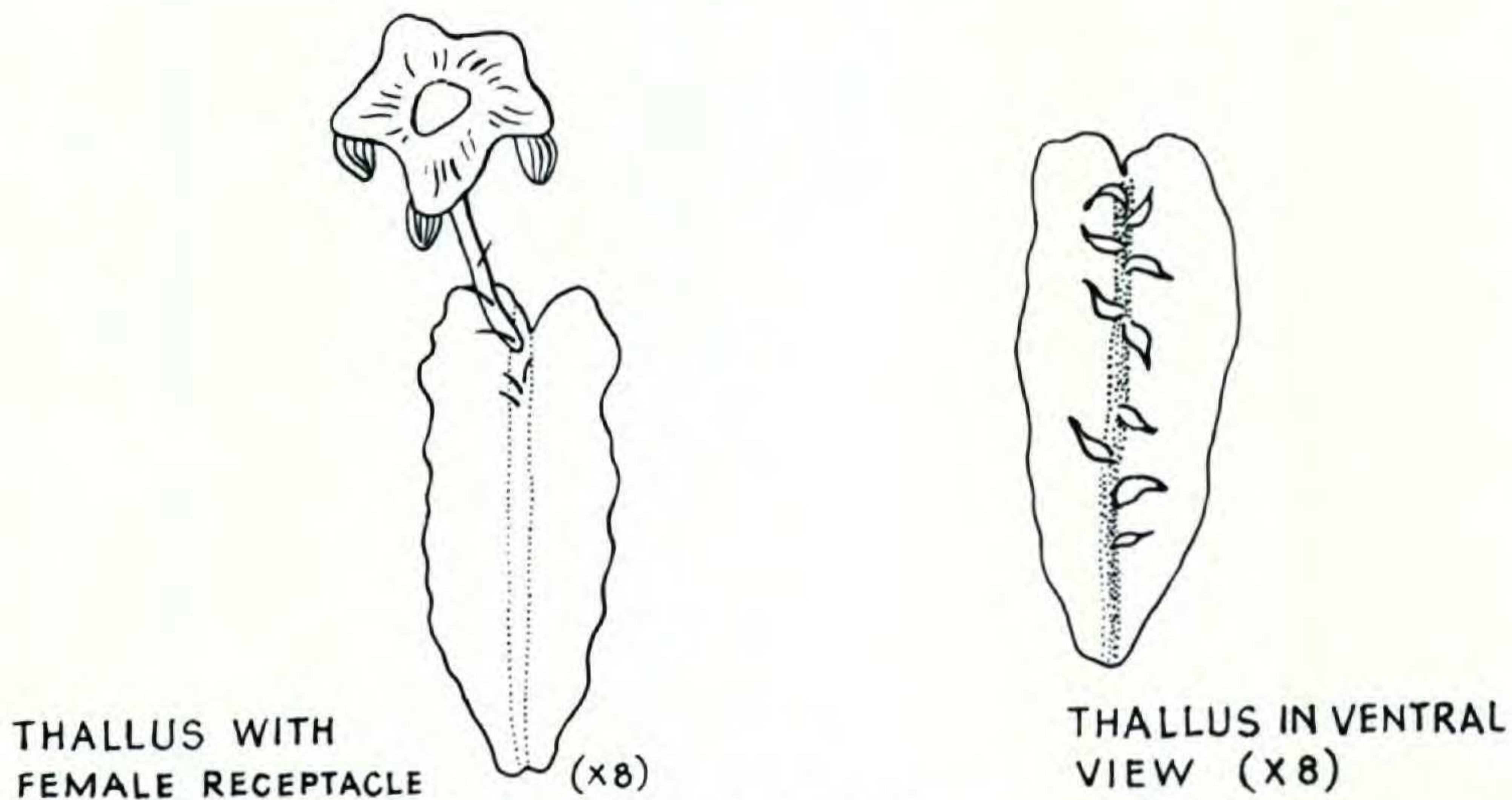
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*Asterella evansii* del Rosario sp. nov. Monoica et tenuis frequenter viridis omnino sed interdum tincta purpureo, praesertim in superficie ventrali. Thalli usque ad 15 mm. longi, 4 mm. lati, ramificantes furcalis, interdum simplicibus ex apice innovatis aliquando praesentibus. Thalli plani vel parvo concavi cum margine crispato et parvo sinuato. Cellulae epidermidis cum tenuibus parietibus sed interdum cum aliquantum distinctis trigonis. Stomata 80-90  $\mu$  longa et 65-80  $\mu$  lata, circumventa 6-7 seriebus cellularum, cum 3 cellulis in quibusque seriebus et cum radialibus parietibus parvo crassatis aliquantum distinctis minutisque trigonis. Squamae ventrales aliquantum purpureae et interdum hyalinis, subulatis et inconstricto basi, acutis usque ad acuminatis, totis vel aliquantum dentatis. Pedunculus cum sparsis paleis tenuibus et parvo confertiore fasciculo in apice, viridosus sed interdum purpurarius usque ad fuscus basi, circa 1 cm. altitudine. Carpocephalum lanum vel fere planum cum parva media parte parvo elatiore, cum inferis et salebrosis tuberculis; involucra dubie sinuata-crenata, vix attingentia margines loborum. Pseudoperianthia alba vel sufflava et interdum tincta purpureo et directa in obliquum desuper. Sporae fulvae, 60-80  $\mu$  diametro cum tota superficie tecta subtile et incomposito reticulo cum retiaculis 1-8  $\mu$  latis. Sporae minute punctulata. Elateres fulvosi, 200-500  $\mu$  et 8-10  $\mu$  lati, etiam plurime bispirales omnino.

Thalli 0.5-1.5 cm. long, 1.5-4 mm. wide, thin, usually green throughout but sometimes more or less tinged with purple, the pigmentation usually more extensive in the ventral surface, branching by forking, sometimes simple, apical innovations sometimes present, plane or slightly concave, with slightly sinuate crispate margins, not incurved when dry, keel broad and rounded. Epidermal cells averaging 40-60  $\mu$ , with thin walls but sometimes with more or less distinct trigones, cells containing oil bodies 10 or fewer, scattered. Pores slightly elevated, 80-90  $\mu$  in length, and 65-80  $\mu$  in width, surrounded by 6-7

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<sup>1</sup>Philippine National Herbarium, National Museum, Manila, I wish to express my appreciation to Dr. Ronald L. McGregor, head of the Botany Department, University of Kansas for his suggestions and criticisms. To the curators of the herbaria of New York Botanical Garden and U. S. National Museum, I am indebted for the loan of specimens. I must also extend my thanks to the National Museum of the Philippines and the University of Kansas whose financial aid made possible this study. To Prof. Austin Lashbrook, Classics Department, University of Kansas, my sincere thanks for editing the Latin diagnosis.



*Asterella evansii* del Rosario, n. sp.

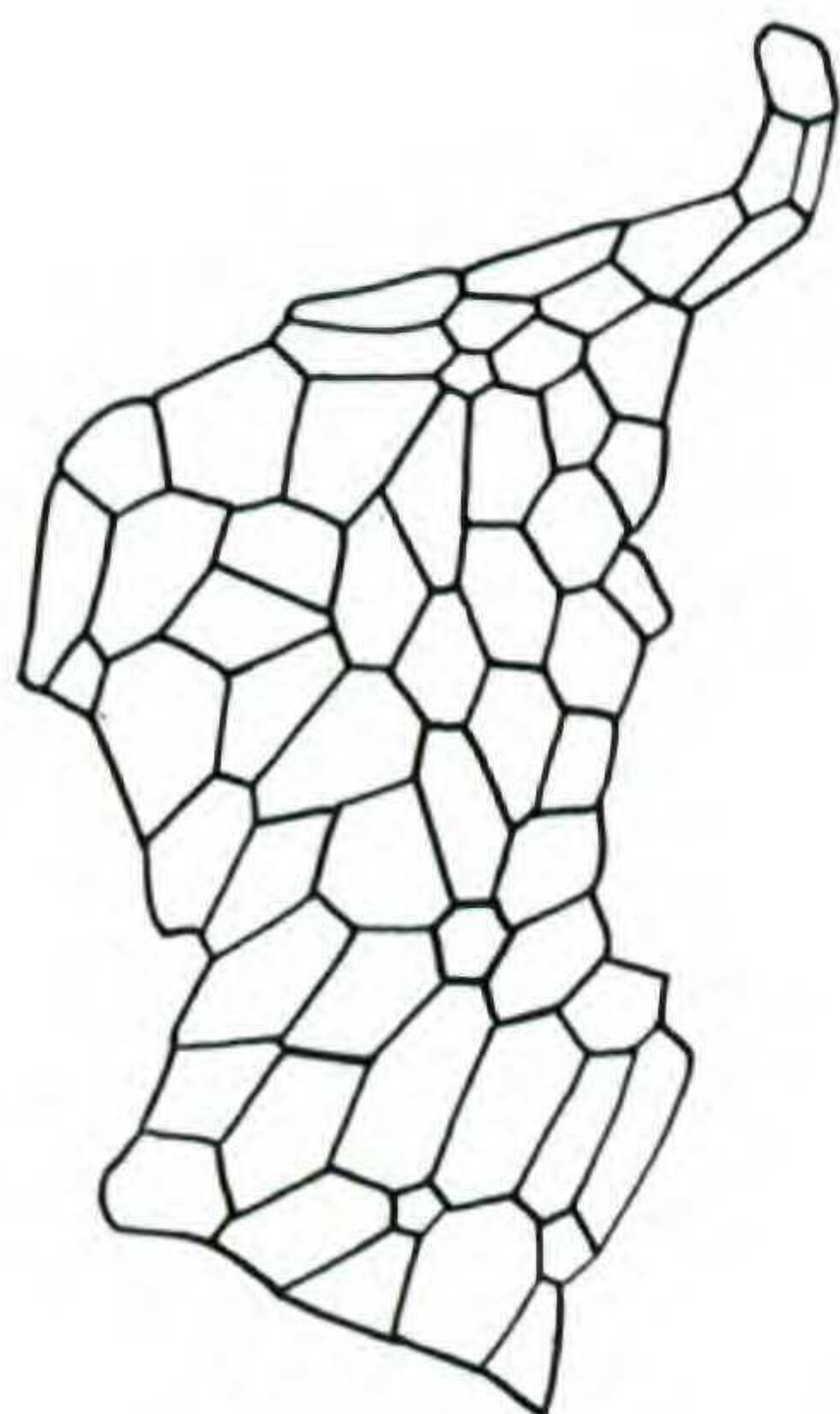
series of cells with 3 cells in each series, radial walls slightly thickened with more or less distinct trigones. Green tissue loose, air chambers sparingly subdivided by supplementary partitions. Ventral tissue composed of cells with thin unpitted walls. Ventral scales more or less purple, sometimes with hyaline margins and appendages, with 10 or fewer oil bodies, appendages 1-2 subulate from an unconstricted base, 0.25-0.4 mm. long and 0.12-0.18 mm. wide, acute to acuminate, entire or somewhat dentate with occasional oil bodies in the ventral portion. Paroicous; the antheridia forming a small and irregular median group near the peduncle of the female receptacle, the ostioles low. Peduncle with scattered slender paleae and a slightly denser cluster at the apex, greenish but sometimes purplish to brownish at base, about 1 cm. high. Disk of receptacle, 3-4 mm. wide, flat or nearly so, with a small slightly elevated center, with low but coarse tubercles, rugose when dry, normally 4-lobed, the lobes spreading almost horizontally, the involucre vaguely sinuate-crenate, barely reaching the margins of the lobes. Pseudoperianth white or yellowish, sometimes pigmented with purple, directed obliquely downward, 8-10-cleft, the divisions narrowly lanceolate, connate at apex, operculum remaining intact at dehiscence. Spores yellowish-brown, 60-80  $\mu$  in diameter, with wavy crenulate wings, 8-14  $\mu$  wide along the edges, the entire surface covered over with a fine and irregular reticulum, the meshes 1-8  $\mu$  wide, the surface, in addition, minutely punctulate. Elaters yellowish-brown, 200-250  $\mu$  and 8-10  $\mu$  wide, variously coiled, mostly bispiral throughout.

Growing on banks. Distribution: Mexico. Type locality: Cañada Santa Magdalena, Mexico.

SPECIMENS CITED — Cañada Santa Magdalena, 1908, *Barnes and Land 441* (NY, holotype, mixed with *Targionia hypophylla* L.);

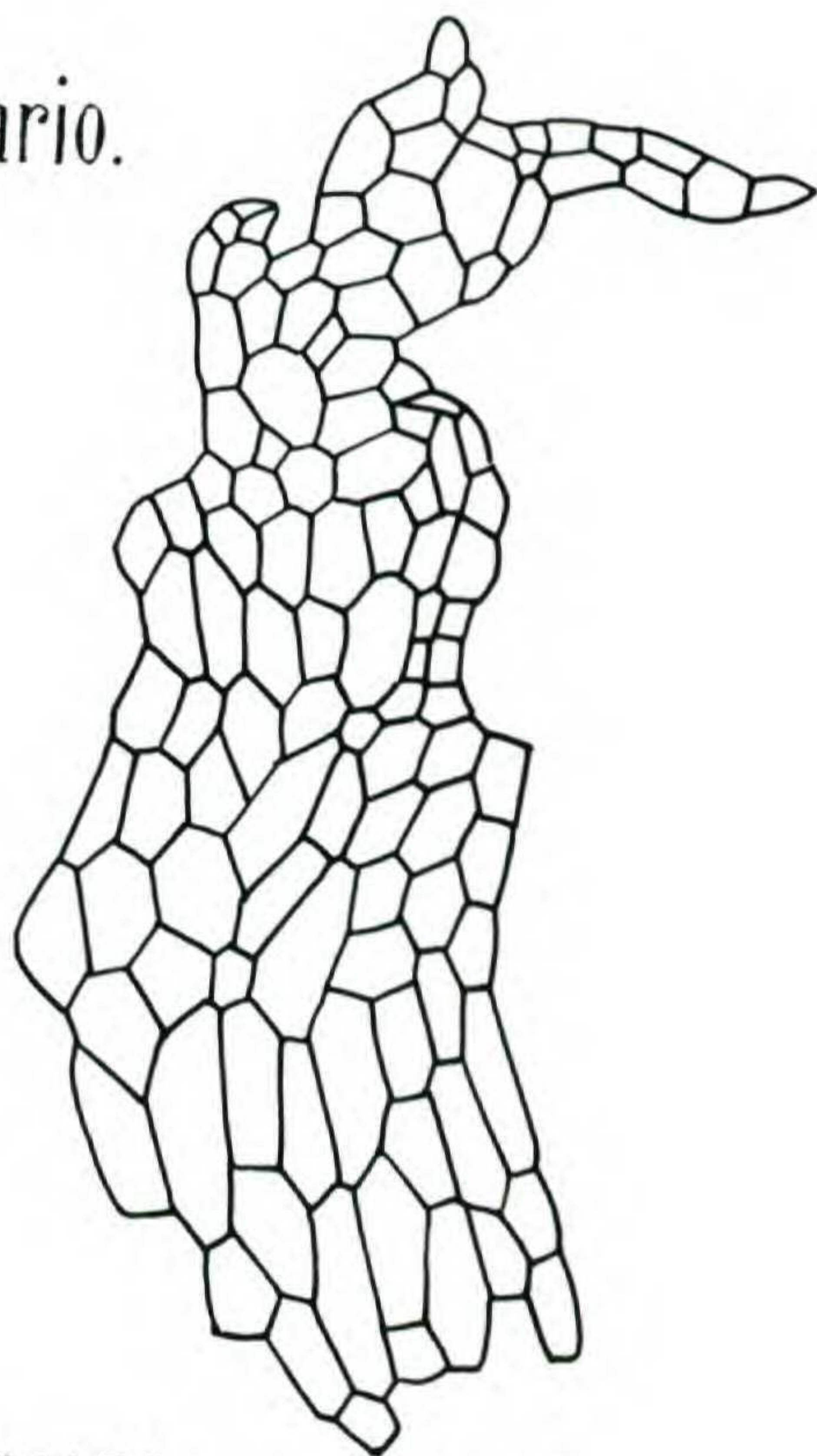
*Asterella evansii* del Rosario.

n. sp.



(x-190)

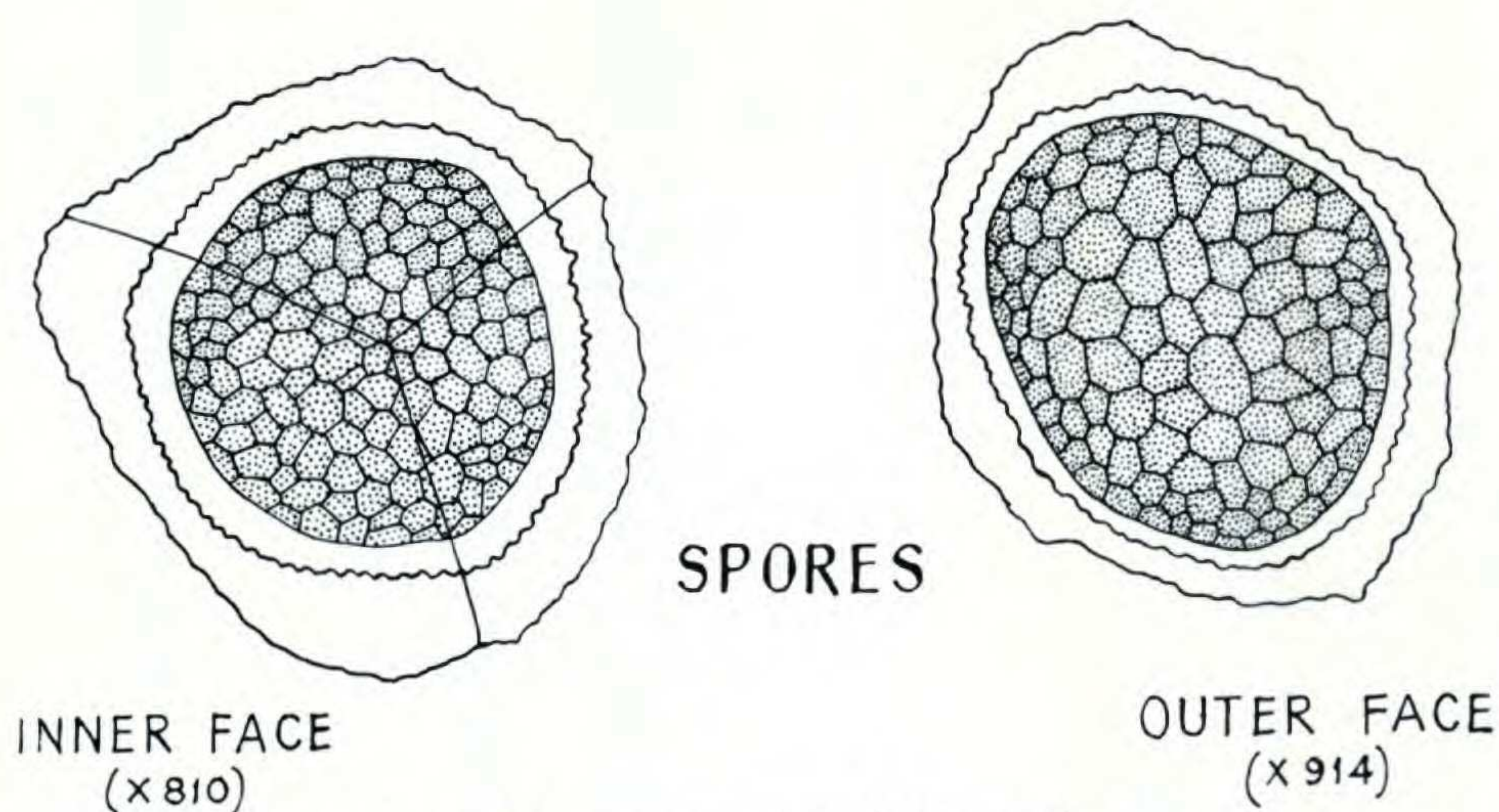
VENTRAL SCALES



(x-200)

Amecameca, 1908, *Barnes and Land* 339 in part (NY, mixed with *Targionia hypophylla* L.); banks along Avenida Hidalgo and path to Teziutlan, Puebla, *Barnes and Land* 555 (NY).

Since 1920, the specimens of this new species have been identified as *A. venosa*, in spite of the fact that the characteristics of their epidermal pores, ventral scales, and spore markings differ from those of the latter species. Evans (1920) was unable to study the type of *A. venosa*. Its distinguishing characteristics which were listed in an annotation made in 1956 are as follows: The radiating series of cells around the pores are 4-6 and the radial walls are not thickened. The appendages of the ventral scales are constricted in the base and the tip is blunt or obtuse with one or two apical cells. In general, the cells of the appendages are globose and do not have oil bodies. The meshes of the spores are larger, 10-24  $\mu$  in diameter. On the other hand, in the new species, *A. evansii*, the radiating series of cells around the pores are 6-8 and the radial walls are thickened. The appendages of the ventral scales are apicu-



Asterella evansii del Rosario, n.sp.

lated, unconstricted at the base and have oil bodies. The meshes of spores are much smaller, being 1-8  $\mu$  wide.

There is another specimen identified also as *A. venosa* which was collected in Venezuela by Chardon in 1932. I determined this specimen as *A. macropoda*, which is a South American species. Its distinguishing characteristics are a larger thallus with lateral intercalary branches, larger epidermal pores, autoicous inflorescence, larger disk of female receptacle, and yellowish-brown pseudoperianth, and 12-16 cleft. The spores are immature but the characteristic brown color is well shown. *A. macropoda* has coarsely reticulate spores 20-30  $\mu$  in diameter.

Thus, *A. venosa* is again restricted to Brazil with possible occurrence in other parts of South America. The extension of the range of this species to Mexico was mainly based on the specimens described above which, as said earlier, were incorrectly determined.

*A. evansii* is named after the late Alexander W. Evans who was the leading authority on the genus in North America.

PHILIPPINE NATIONAL HERBARIUM  
NATIONAL MUSEUM, MANILA

LITERATURE CITED

EVANS, A. W. 1920. The North American Species of *Asterella*,  
Contr. U. S. National Herbarium 20: 286.